

**BY ORDER OF THE COMMANDER
36TH WING**

36TH WING INSTRUCTION 21-110

14 AUGUST 2014



Maintenance

**FOREIGN OBJECT DAMAGE (FOD),
DROPPED OBJECT PREVENTION (DOP),
PROGRAM, AND TOOL ACCOUNTABILITY**

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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This publication fulfills the requirements of Air Force Instruction (AFI) 21-101, *Aircraft and Equipment Maintenance Management*, Combat Air Forces Supplement (CAF) dated 11 July 2012, Chapter 14, paragraph 14.11. *Dropped Object Prevention (DOP) Program* and paragraph 14.19, *Foreign Object Damage (FOD) Prevention Program*. This publication establishes the minimum responsibilities and procedures governing Chapter 10, paragraph 10.4, *Tool Accountability*. It applies to all military, civilians and contractors working near aircraft, munitions, AGE, engines, or components. It applies to the 36 Wing including Geographically Separated Units, Air Force Reserve Command and Air National Guard units. When guidance in this publication conflicts with tenant unit command guidance, the more restrictive guidance will take precedence. Report discrepancies discovered by users, other than paragraph realignment, to the 36 WG/FOD manager. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with (IAW) Air Force Manual (AFMAN) 33-363, *Management of Records*, and disposed of IAW Air Force Records Disposition Schedule (RDS) located in the Air Force Records Information Management System (AFRIMS). The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

1. Overview. FOD and DOP is the responsibility of **every** individual working in or around the airfield. Commanders and supervisors with missions on the airfield or supporting aircraft operations are responsible for implementing these procedures. Continual training, awareness and

discipline are important elements of an effective FOD/DOP program. **The overall program objective is “ZERO FOD and DO” mishaps.**

1.1. **Foreign Object Damage (FOD).** FOD is any damage to an aircraft engine, aircraft system, equipment or tire caused by an external foreign object (FO) which may or may not degrade the required safety or operational characteristics of the engine, aircraft system or tire. Common causes of FOD are poor housekeeping, improper maintenance practices and aircraft taxiway or ramp deterioration.

1.2. **Dropped Object Prevention (DOP).** A dropped object (DO) is any aircraft part, component, surface or other item lost during aircrew operations from engine start to engine shutdown, unless intentionally jettisoned. Inadvertently released munitions or munitions released in excess of the quantity selected by the aircrew are not considered dropped objects and will be reported IAW AFI 91-204, *Safety Investigations and Reports*.

1.3. Any area where a noticeable FO hazard is identified shall be immediately reported through Maintenance Operations Center (MOC) at 366-4321 and Airfield Management at 366-4188 to ensure the applicable ramp/runway area is swept or cleared before engine run or taxi operations begin.

2. Program Management This section establishes additional 36 WG requirements for implementation of AFI 21- 101 CAF Sup 1 paragraph 14. 19, FOD prevention program.

2.1. Wing FOD/DOP Manager responsibilities

2.1.1. Manage the FOD/DOP program in conjunction with AFI 21-101 and associated supplements.

2.1.2. Organize, report and present FOD/DOP program status at monthly and quarterly senior FOD/DOP program committee briefings.

2.1.3. Investigate and report all FOD/DOP incidents on Andersen AFB with the assistance of an aircraft or airframe specific specialist from the transient, deployed or tenant unit. All initial and final FOD/DOP reports will be routed up the chain using an eSSS to 36 WG/CV or if unavailable 36 MXG/CC, for local approval prior to forwarding reports off base.

2.1.3.1. All deployed or transient aircraft FOD/DOP reports shall be forwarded to their owning wing FOD/DOP monitor in order to finalize the report at home station.

2.1.4. Maintain all digital copies of FOD/DOP reports IAW AFI 21-101 for a minimum of two years.

2.1.5. Coordinate with 36 MXG/Quality Assurance (QA) and accomplish inspections to determine compliance with FOD/DOP procedures.

2.1.5.1. Address areas of concern to the 36 WG/CV, 36 MXG/CC, unit commanders and unit superintendents.

2.1.5.2. Annotate inspection findings in 36 MXG/QA database.

2.1.6. Develop and manage the FOD Prevention Incentive Program.

2.1.7. Analyze program areas that require additional management emphasis.

2.1.8. Generate and distribute FO prevention material to unit FOD/DOP monitors.

2.1.9. Manage and maintain the Failure Analysis Service Technology (FAST) kit. The FAST kit will be used to the maximum extent possible.

2.2. Unit Commander Responsibilities

2.2.1. Each unit operating on the flightline will establish and maintain an effective unit FOD/DOP program. A FOD/DOP prevention program will also be implemented at all deployed locations.

2.2.2. Each unit operating on the flightline will appoint primary and alternate unit FOD/DOP monitors in writing to the 36 WG FOD/DOP Manager. Forward appointment letters to 36wg.cvf@us.af.mil. Unit FOD/DOP monitors are the unit point of contact for all FOD/DOP issues or concerns.

2.2.3. Deployed, attached or TDY units will appoint an owning unit trained primary and alternate unit FOD/DOP monitor in writing to the 36 WG FOD/DOP Manager. Forward appointment letters to 36wg.cvf@us.af.mil.

2.2.3.1. Deployed QA personnel may fill this position.

2.2.3.2. Deployed QA personnel will deploy with a home station FOD/DOP continuity book.

2.2.4. Ensure maximum participation in unit weekly and daily FO walks.

2.2.5. All unit commanders shall actively support the FOD Prevention Incentive Program.

2.3. Unit FOD/DOP Monitor Responsibilities

2.3.1. Ensures widest distribution of 36 WG FOD/DOP Manager information. Brief pertinent information contained in flashes, reports and minutes to all work center personnel and perform FO Chief duties.

2.3.2. May be assigned additional duties and/or responsibilities as required by unit CC, superintendent or supervisor.

2.3.3. Unit FOD/DOP Monitors will maintain a continuity book or digital folder containing the following as a minimum:

2.3.3.1. Tab A: Letters of Appointment: Wing FOD Manager and Unit FOD Monitor.

2.3.3.2. Tab B: AFI 21-101 CAF Supplement 1, FOD/DOP prevention sections.

2.3.3.3. Tab C: 36 WGI 21-110, *Foreign Object Damage (FOD), Dropped Object Prevention (DOP) Program, and Tool Accountability*

2.3.3.4. Tab D: FO walk procedures:

2.3.3.4.1. FO walk checklist

2.3.3.4.2. Map of FO Walk AOR

2.3.3.4.3. Weekly FO walk log; provided by 36 WG FOD/DOP Manager.

2.3.3.5. Tab E: Miscellaneous/Memos

2.3.4. FOD/DOP bulletin boards will be maintained and kept current by each section, work center, or facility that works in the flightline area or on any flightline related equipment. The FO/DOP bulletin board should be located in a conspicuous location to increase individual awareness of FOD/DOP prevention. Multiple shops in the same area can use a common FO/DOP bulletin board. All required material can be obtained by contacting the 36 WG/FOD Manager at 366-4616 or duty cell 687-0428.

2.3.5. FO/DOP bulletin board required contents are the following:

2.3.5.1. The 36 WG/FOD Prevention Policy letter

2.3.5.2. The 36 WG/FOD/DOP Manager poster.

2.3.6. The following are FO Chief duties during 36 WG FO walks:

2.3.6.1. Attend the FO Chief pre-planning briefing prior to starting the WG FO walk.

2.3.6.2. Ensure FO walk line is straight and maintains a forward progress.

2.3.7. The units FOD/DOP Monitors are also members of the Junior FOD Prevention Committee.

2.3.7.1. Attend quarterly and/or monthly the FOD/DOP Program Committee meetings as required.

3. FOD Prevention Committees

3.1. AFI 21-101 CAF Sup 1, para 14.19.6., establishes the minimum attendees. The following personnel are also appointed to the 36 Wing Senior FOD Prevention committee and must attend:

3.1.1. The Commander and Superintendents of: 734th Air Mobility Squadron, 69th Reconnaissance Group, Detachment 1 and Helicopter Sea Attack Squadron 25.

3.2. The 36 WG Senior FOD Prevention Committee reviews the progress of the FOD Prevention Program and provides policy recommendations to the 36 WG/CV to ensure a successful program.

4. 36th Civil Engineer Squadron (CES) Responsibilities

4.1. Provide powered sweepers for aircraft parking ramps, taxiways, runways, flightline access roads and other areas of the airfield as required per paragraph 6.3.

4.2. Ensure recently swept areas are FO free upon completion of sweeping operations to ensure the actions have not created a FO hazard such as broken bristles or broken taxiway lights.

4.3. Ensure vegetation growth is controlled and maintained for all aircraft parking ramps, taxiways, runways, flightline access roads and other areas of the airfield.

4.4. Provide monthly serviceability status of sweepers and hourly usage to the 36 WG/FOD Manager, email to 36wg.cvf@us.af.mil, for inclusion in the monthly/quarterly Senior FOD Prevention Committee meeting.

4.5. Provide assistance and technical advice to the 36 WG/FOD Manager and Senior FOD Prevention Committee for pavement repairs, airfield construction, and other functions that fall under 36 CES.

4.6. Ensure all contractors performing airfield repair work are properly trained on the USAF FOD prevention program and supplied with all required vehicle flightline driving items.

5. Unit Vehicle Control Non-Commissioned Officer (VCNCO) Responsibilities

5.1. Shall ensure all vehicles driven on the flightline are equipped with an FO kit (FO pick tool, FO container and flashlight). Each FO container will be emptied after each shift.

5.2. For all permanently assigned vehicles, the 36 WG FOD manager, 36 MXG QA or support section where the vehicle is assigned will: ensure FO pick tool, FO container and flashlight are individually annotated on the back of the AF IMT 1800, *Operator's Inspection Guide and Trouble Report* and are etched or stamped with the vehicle registration number.

5.3. Tenant and deployed VCNCOs may sign out FO kits from the 36 WG/FOD Manager 366-4616 or duty cell 687-0428.

5.3.1. Will conduct 100% monthly inventory along with the 36 WG/FOD Manager to ensure proper accountability of FOD kits.

5.3.2. Will ensure FO pick tool, FO container, and flashlight are individually annotated on the back of the AF IMT 1800, *Operator's Inspection Guide and Trouble Report*, with 36 WG/FOD kit etching.

5.3.3. Will ensure all FO kits are returned at the end of each deployment.

5.3.4. Tenant and deployed units are responsible for exact replacement of any lost or missing items from 36 WG/FOD FO kits. *i.e. replace a missing Solitaire Maglite with a Solitaire Maglite.*

5.4. Initiate a lost tool report, CAF IMT 145, *Lost Tool/Object Report*, in accordance with para 13.2, for any lost or missing FO kit item(s).

6. Unit Areas of Responsibilities (AORs) for FO walks, sweeper, and/or FOD Boss use (*Please see attachment 2*)

6.1. Aircraft spot and hangar FO inspections will be performed on aircraft parking spot locations prior to all engine starts, after aircraft taxi and before taxiing aircraft are allowed to recover back to their parking spot. Additionally, perform FO inspections of hangars and parking spots prior to performing any towing operations.

6.1.1. The 36th Maintenance Squadron (MXS) will FO walk the outside of Hangars 2 through 4 weekly, to include throat area and between Bravo taxi lanes and the hangars.

6.1.2. The 36th Logistics Readiness Squadron (LRS) will FO walk the POL gate entrance and truck filling station located near POL gate Monday through Friday.

6.1.3. The 36th Operations Support Squadron (OSS) will coordinate sweeper truck operations with 36 CES for all taxi lanes, taxiways, runways, ramps and unused aircraft parking areas.

6.1.4. The 734th Air Mobility Squadron (AMS) will conduct a minimum of one FO walk per week between spots S-79 to S-91.

6.1.5. HSC-25 will FO walk the North Ramp 1 helicopter parking area and hangar weekly.

6.1.6. All deployed and TDY units will FO walk their assigned parking areas daily prior to launch and recovery operations.

6.1.7. The 36th Expeditionary Aircraft Maintenance Units (EAMUs) will FO walk Hangar 1 weekly, to include the throat area between Alpha and Bravo taxi lanes and hangar. Aircraft parking ramp will be FO walked daily or prior to every launch/engine run.

6.1.8. The 36th Munitions Squadron (MUNS) will conduct FO walks of operating locations and munitions holding areas within the Munitions Storage Area.

6.1.9. The 69th Reconnaissance Group, Detachment 1 (69 RG Det 1) will FO walk Hangar 6 weekly, to include the throat area between Bravo taxi lane and the hangar. Global Hawk parking spots S72, S74, and S76 will be FO walked prior to every launch/engine run operation.

7. Maintenance Operations Center (MOC) Responsibilities

7.1. When a FOD/DOP incident occurs, immediately notify 36th Maintenance Group Quality Assurance (36 MXG/QA) at 366-4616, 36 WG/FOD Manager (36 WG/CVF) at 366-4616 or duty cell 687-0428, and 36th Wing Safety (36 WG/SE) at 366-3325 of the incident.

7.2. Coordinate with Airfield Management at 366-4188 for dispatch of sweepers for FOD removal.

7.3. Notify the 36 Wing Flight Safety office at 366-3325 for all bird strikes. Maintenance personnel will collect all bird remains in a plastic bag and pass to Flight Safety personnel with a completed AF IMT 853.

8. Reporting/Investigation

8.1. All tenant units will follow the published FOD/DOP incident reporting procedures for their respective command. Forward a copy of any reports to the 36 WG/FOD Manager at 36wg.cvf@us.af.mil for trending purposes.

8.2. All FOD/DOP incidents will be reported and investigated by the 36 WG/FOD Manager. All units shall notify 36 WG/MOC at 366-4321. The 36 WG/MOC will initiate the FOD/DOP Critical Action Checklist.

8.3. For installed engine FOD, enter a "RED-X" in the AFTO Form 781A with the discrepancy, "Suspected/Actual FOD to Engine #." Stop all maintenance on the affected engine, notify MOC at 366-4321, and do not continue until authorized by the 36 MXG/CC or designated representative with assistance from the 36 WG FOD Manager (36 WG/CVF), 36 Wing Safety (36 WG/SE), or 36 MXG Quality Assurance (36 MXG/QA) as needed.

8.4. For confirmed engine FOD the 36 WG/FOD Manager will initiate a FOD report. The 36 WG/SE may appoint an investigation officer for reportable FOD events under the provisions of AFI 91-204. The 36 WG/SE then controls all aspects of the investigation and reporting.

8.5. All units will notify 36 WG/MOC at 366-4321, 36 MXG/QA at 366-4616, and 36 WG/FOD Manager at 366-4616 or duty cell 687-0428 for any aircraft tires damaged by FO prior to wheel and tire assembly removal.

9. General FOD Prevention

9.1. All units will make every attempt to remove FO from the flightline. If an object is too large, awkward or hazardous to be removed (i.e. damaged pavement or parking areas) contact Airfield Management at 366-4188 or by radio on the "RAMP" net with specific location and description of the object.

9.2. Personnel performing intake inlet and exhaust inspections will remove Restricted Area Badges prior to performing the inspections.

9.3. Remove or secure restricted area badges within 25 feet of operating engine(s). **EXCEPTION:** Line badges can be secured inside of an armband pouch.

9.4. Wear of headgear is prohibited on the flightline, except required safety items and the following:

9.4.1. During special events such as ceremonies and festivals, hats or flight caps may be worn provided there are no aircraft operating within 50 feet.

9.4.2. Berets may be worn by Security Forces guarding the inside of an aircraft hangar.

9.4.3. Rain gear hoods must be stowed within 50 feet of operating aircraft engines.

9.5. Glass bottles are not authorized on the flightline. IAW AFI 91-203, Para 14.4.13.2., Food or drinks are not authorized in industrial work areas exposed to toxic materials, chemicals or industrial shop contaminants.

9.6. All aircraft shall utilize owning wing cockpit FOD prevention guidance.

10. Vehicle Operator/Vehicle FOD Prevention Requirements

10.1. Be familiar with 36WGI 13-213, *Andersen AFB Airfield Driving*, and adhere to all airfield signs and notifications. Perform vehicle tire FO checks where specified or appropriate.

10.2. All vehicles that access the flightline will be free of litter, rocks or other debris to include tires, engine compartment, interior and exterior of the vehicle. All vehicles accessing the flightline are subject to FO checks.

10.2.1. Additional equipment for vehicles (i.e. chocks, extension cords) will be annotated on the vehicle inspection form.

10.2.2. Inspect bumper magnet (if installed) and remove debris daily.

10.3. Vehicle operators will perform a Roll-Over FO check on all vehicle and equipment tires as follows (Note: vehicle operator shall properly wear the seat belt when vehicle is in motion):

10.3.1. Shut off ignition if the driver's seat is to be vacated.

10.3.2. Set the parking brake prior to getting out of the vehicle.

10.3.3. Ensure all doors are closed during the tire check.

10.3.4. Inspect the vehicles tire tread groove areas from sidewall to sidewall.

10.3.5. Re-enter vehicle, release parking brake, re-start ignition, and pull forward enough to expose bottom of tread groove, approximately 180 degrees, then re-perform items 10.3.1 through 10.3.4.

10.3.6. Failure to accomplish proper FO checks may result in temporary suspension of flightline driver's license AF IMT 483, *Certificate of Competency*, IAW 36WGI 13-213.

10.4. Emergency vehicles responding to emergencies are exempt from vehicle FOD checks unless time permits (e.g., if emergency aircraft will not land for more than 15 minutes).

10.5. A flashlight will be utilized to accomplish FO checks during hours of darkness.

10.6. Vehicle operators will inspect vehicles transporting equipment and other items to ensure items are secured.

10.7. For non-high pressure split wheel rims, metal valve stem caps will be removed (plastic caps required on GOV tires).

10.8. Vehicle operators will only use authorized Entry Control Points (ECPs).

10.9. Pintle hook pins will be secured to the vehicle with a lanyard and installed in the hook locking mechanism at all times. Pintle hooks shall be closed at all times when not in use.

10.10. Inspect all rolling equipment for FO after any maintenance and prior to flightline entry.

10.11. Vehicle operators are responsible for monitoring and emptying the FOD container after each work shift.

11. FOD Prevention Incentive Program

11.1. The 36 WG FOD Prevention Incentive Program requires active involvement at both the organizational and individual levels. The intent of the program is to reward FOD conscious personnel who take extra steps to identify and correct potential FOD hazards both on and off the flightline. The 36 WG FOD Manager oversees the program.

11.2. The FOD Fighter of the Month award promotes attention to detail by identifying and eliminating potential sources of FOD.

11.2.1. Submit FOD award nominations to 36 WG FOD Manager at 36wg.cvf@us.af.mil with name of the individual who found the item(s), a contact number, date, time, and where the item(s) were found on the airfield. All submissions are due by the last duty day of each month.

11.3. The FOD Poster Contest promotes awareness and prevention. Poster submissions may be hand drawn or computer generated. A poster will be selected quarterly and may be enlarged and posted on unit FOD bulletin boards.

11.4. All FOD Prevention Incentive Program winners receive a Certificate of Recognition from the 36 WG/ CV and a 1-day pass (CTO). Use of the 1-day pass should be coordinated with your supervisor.

12. Dropped Object Program (DOP)

12.1. When a Dropped Object is discovered on assigned or transient aircraft:

12.2. The identifying squadron will notify the MOC immediately.

12.2.1. Use ACC DO Investigation and AMU FOD/DO excel worksheets to document findings; these can be obtained from the 36 WG FOD/DOP Manager at 671-687-0428. Please refer to paragraph 8 of this instruction for reporting procedures.

12.2.2. The unit Operations Officer/Maintenance Superintendent will ensure the DO investigation worksheets are completed and forwarded to the Wing DOP Monitor at 36wg.cvf@us.af.mil within 24 hours.

13. Composite Tool Kit (CTK)/Tool Control Procedures

13.1. All tools in aircraft-related maintenance areas will be marked with permanent identifiers and tracked by the owning work center. All personnel in aircraft-related maintenance areas will perform a 100% accounting of their tools upon entry and before exiting these areas.

13.2. Emergency vehicles responding to real-world emergencies from a flight line location to an off flight line location will account for tools upon termination of the emergency incident.

14. Lost Tool/Object Procedures

14.1. IAW AFI 21-101 CAF SUP, Para 10.8.1.5 notify the section supervisor and flight OIC or NCOIC of a lost tool or item within one hour. The section supervisor or flight OIC/NCOIC will initiate a CAF IMT 145, *Lost Tool/Object Report*, which can be found at <http://www.e-publishing.af.mil/> and will contact the Maintenance Operations Center (MOC) to obtain a control number. MOC will run Lost Tool/Item Checklist procedures and notify all applicable members.

14.2. Complete CAF IMT 145 IAW AFI 21-101 CAF Sup 1 and applicable supplements.

14.3. Once initiated, the CAF IMT 145 must be completed regardless of the status of the item.

14.4. The individual and supervisor will conduct a search. If the lost tool or object was in a shop and aircraft components were involved, the appropriate components will be inspected.

14.5. The search will be terminated upon request of the section supervisor with concurrence of the flight OIC/NCOIC.

14.6. The CAF IMT 145 will be kept for 12 months in the tool room or work center CTK continuity folder.

14.7. IAW AFI 21-101 CAF SUP, Para 10.8.1.5 the original completed CAF IMT 145 will be delivered to 36 MXG Quality Assurance office in building 17000 within 5 duty days of initiation IAW AFI 21-101 CAF SUP.

14.8. If a previously lost item is found, contact MXG/QA at 366-4616 to update the lost tool report.

STEVEN D. GARLAND, Brigadier General, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 21-101 CAF Sup 1, *Aircraft and Equipment Maintenance Management*, 11 July 2012

AFI 91-203, *Consolidated Occupational Safety Instruction*, 4 Dec 2012

AFI 91-204, *Safety Investigations and Reports*, 24 September 2008 36WGI 13-213, *Andersen AFB Airfield Driving*

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Prescribed Forms

AF IMT 483, *Certificate of Competency*

AF IMT 853, *Air Force Wildlife Strike Report*

AF IMT 1800, *Operator's Inspection Guide and Trouble Report*

CAF IMT 145, *Lost Tool/Object Report*

Abbreviations and Acronyms

AFI—Air Force Instruction

AFPD—Air Force Policy Directive

CC—Commander

CTK—Consolidated Tool Kit

DO—Dropped Objects

DOP—Dropped Object Program FOD — Foreign Object Damage

FO—Foreign Object

IAW—In Accordance With

IMT—Information Management Tool

MIL—Master Inventory Listing

MOC—Maintenance Operations Control

MXG—Maintenance Group

OG—Operations Group

OI—Operating Instruction

OPR—Office of Primary Responsibility OSS — Operations Support Squadron

POL—Petroleum Oil Lubricants

PAS—Personnel Assignment System

QA—Quality Assurance

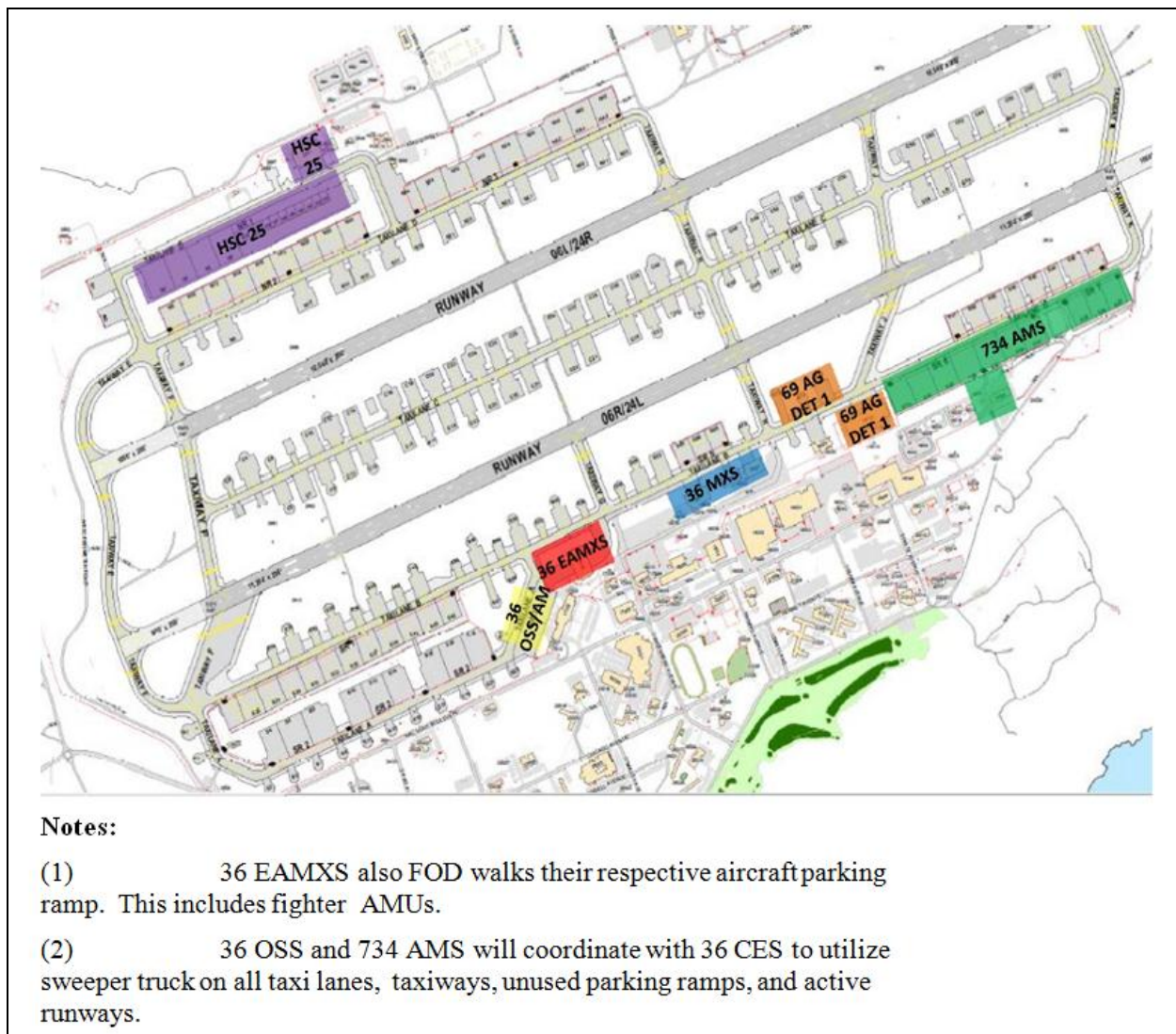
WRM—War Ready Material

WWID—Worldwide Identification

Attachment 2

36WG UNITS' FOD WALK AREA OF RESPONSIBILITY (AOR)

Figure A2.1. 36WG Units' FOD Walk Area of Responsibility (AOR)



Notes:

- (1) 36 EAMXS also FOD walks their respective aircraft parking ramp. This includes fighter AMUs.
- (2) 36 OSS and 734 AMS will coordinate with 36 CES to utilize sweeper truck on all taxi lanes, taxiways, unused parking ramps, and active runways.